



Inventor: Lee *et al.*
Title: METHOD, APPARATUS, AND SYSTEM
Application No. 10/815,111
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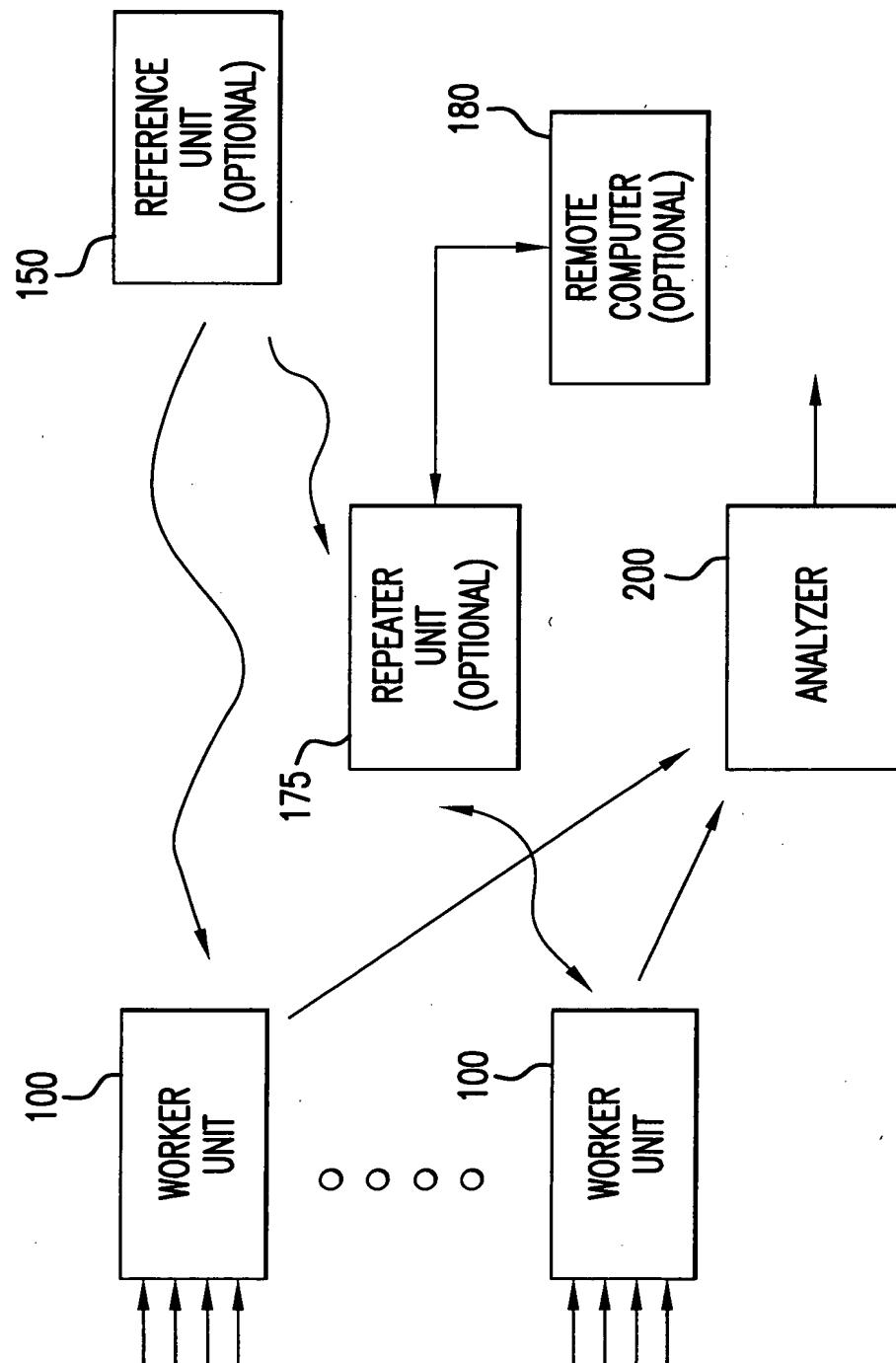


FIG. 1

BEST AVAILABLE COPY

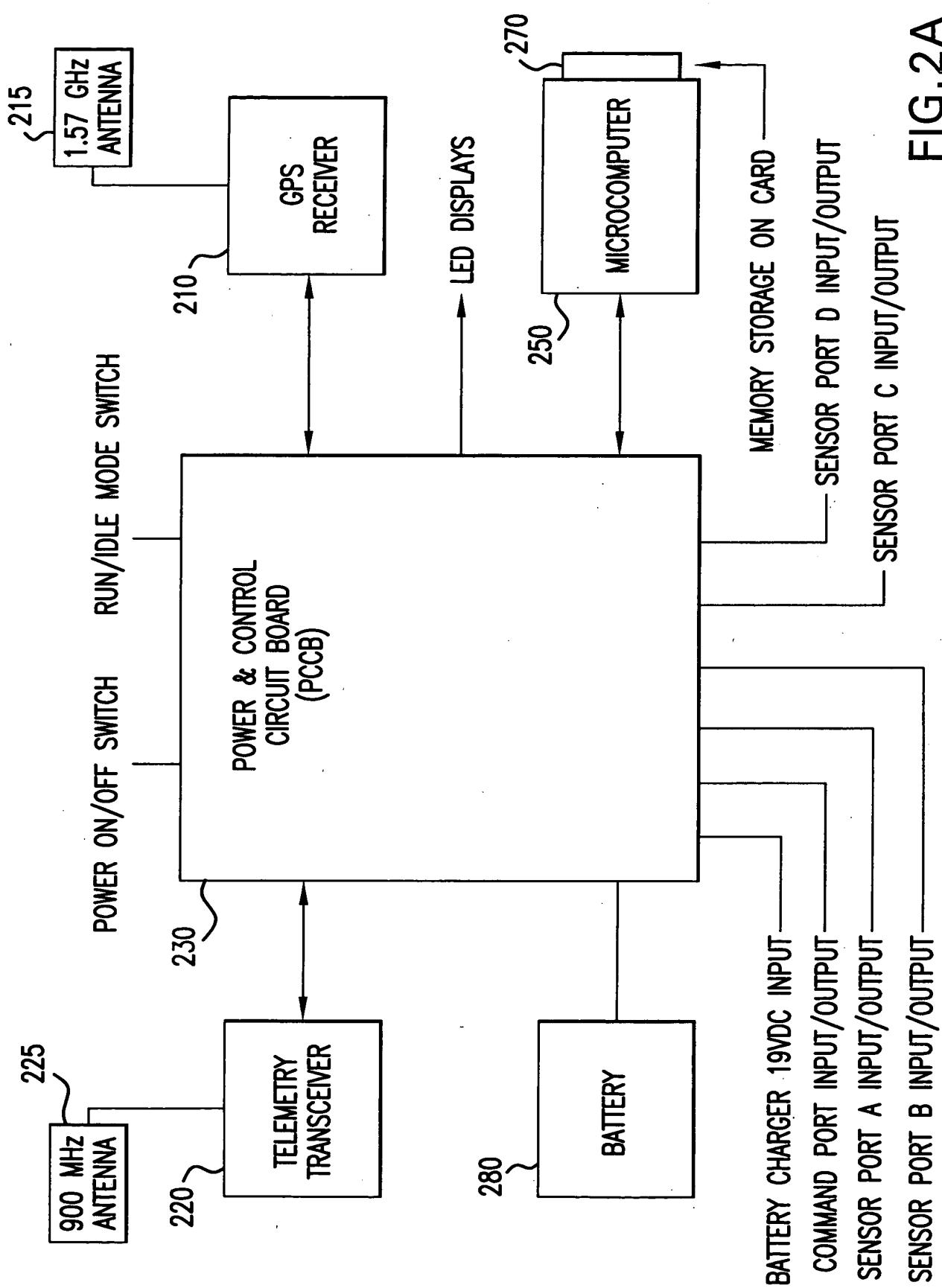


FIG. 2A

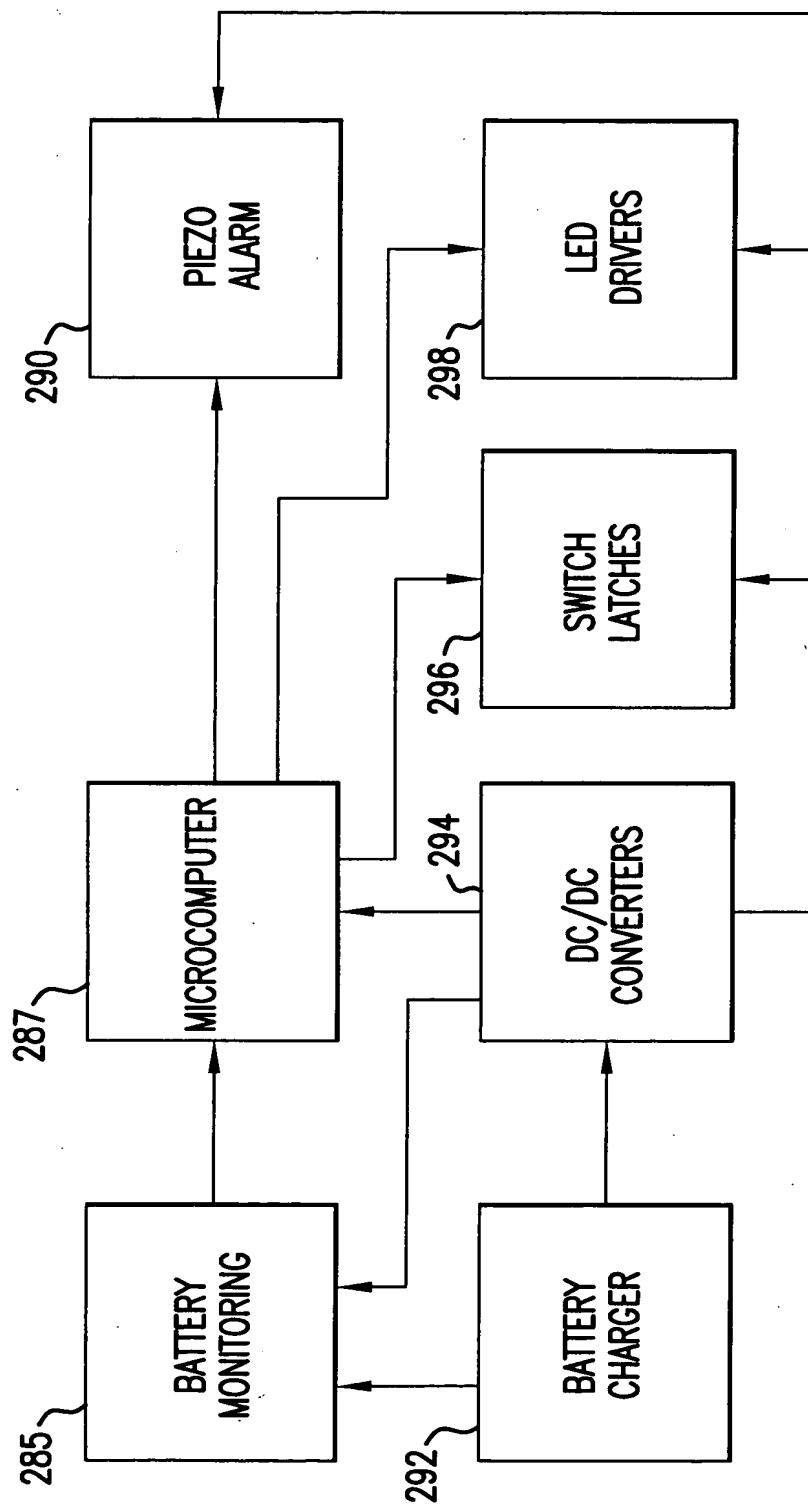


FIG. 2B

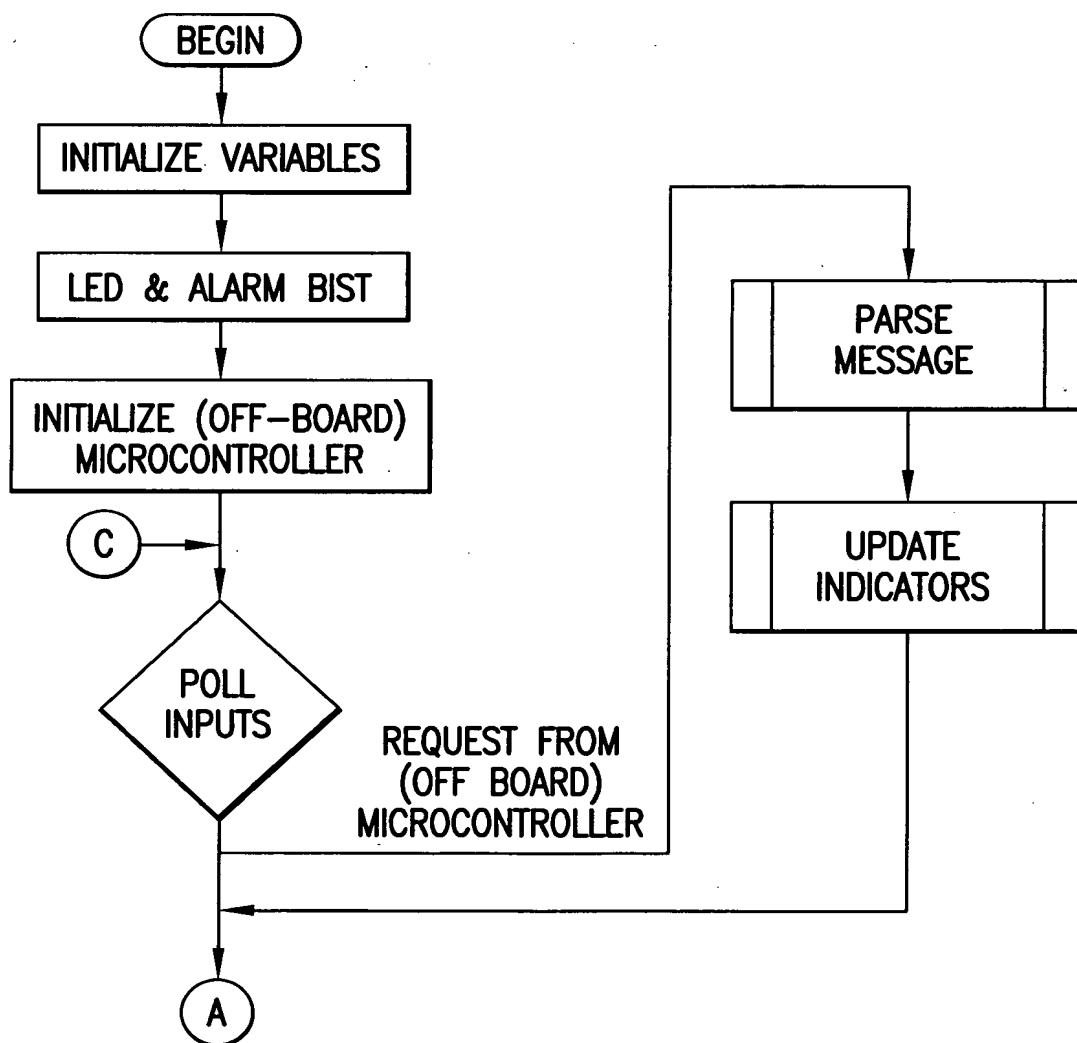


FIG.3A

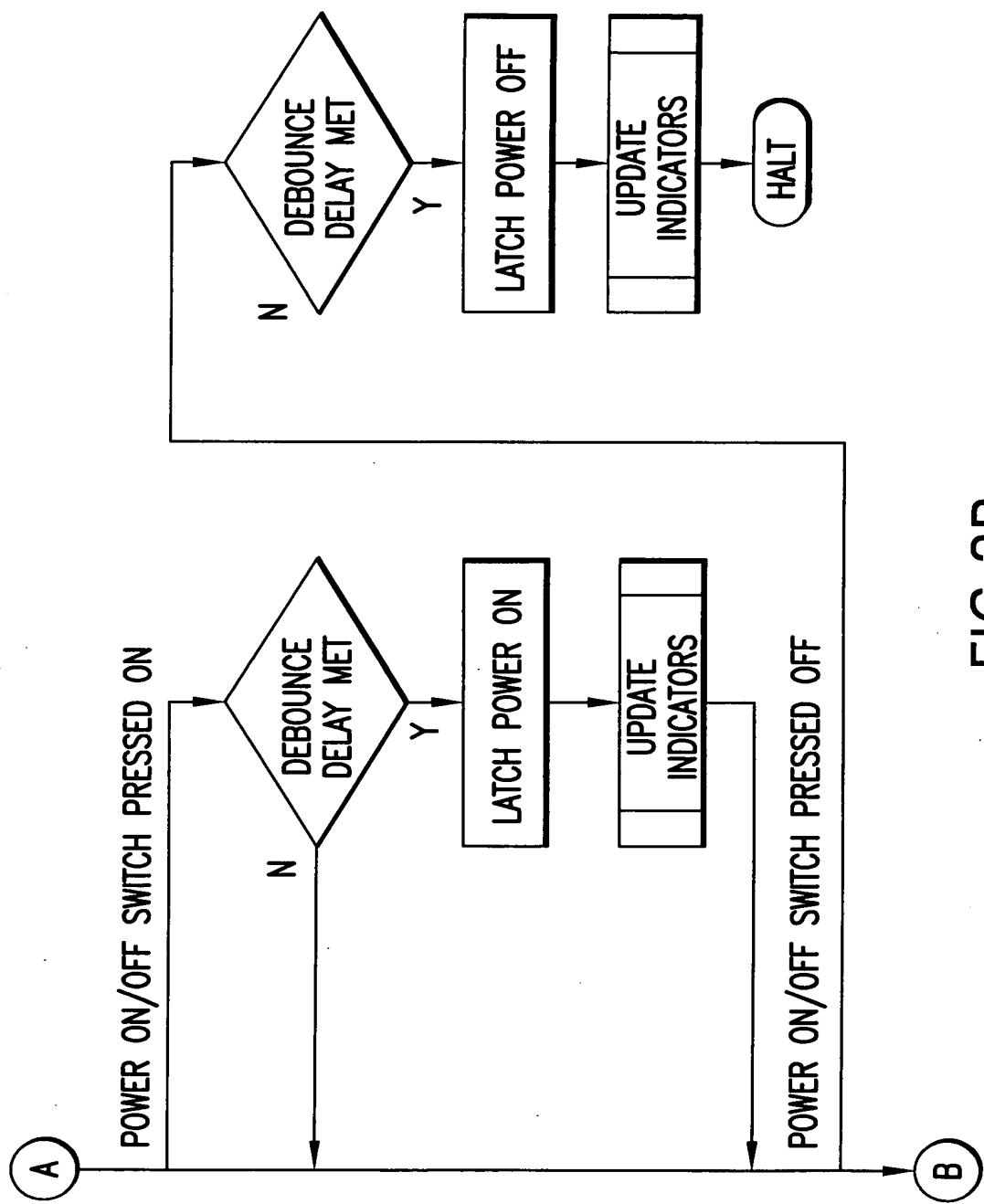


FIG. 3B

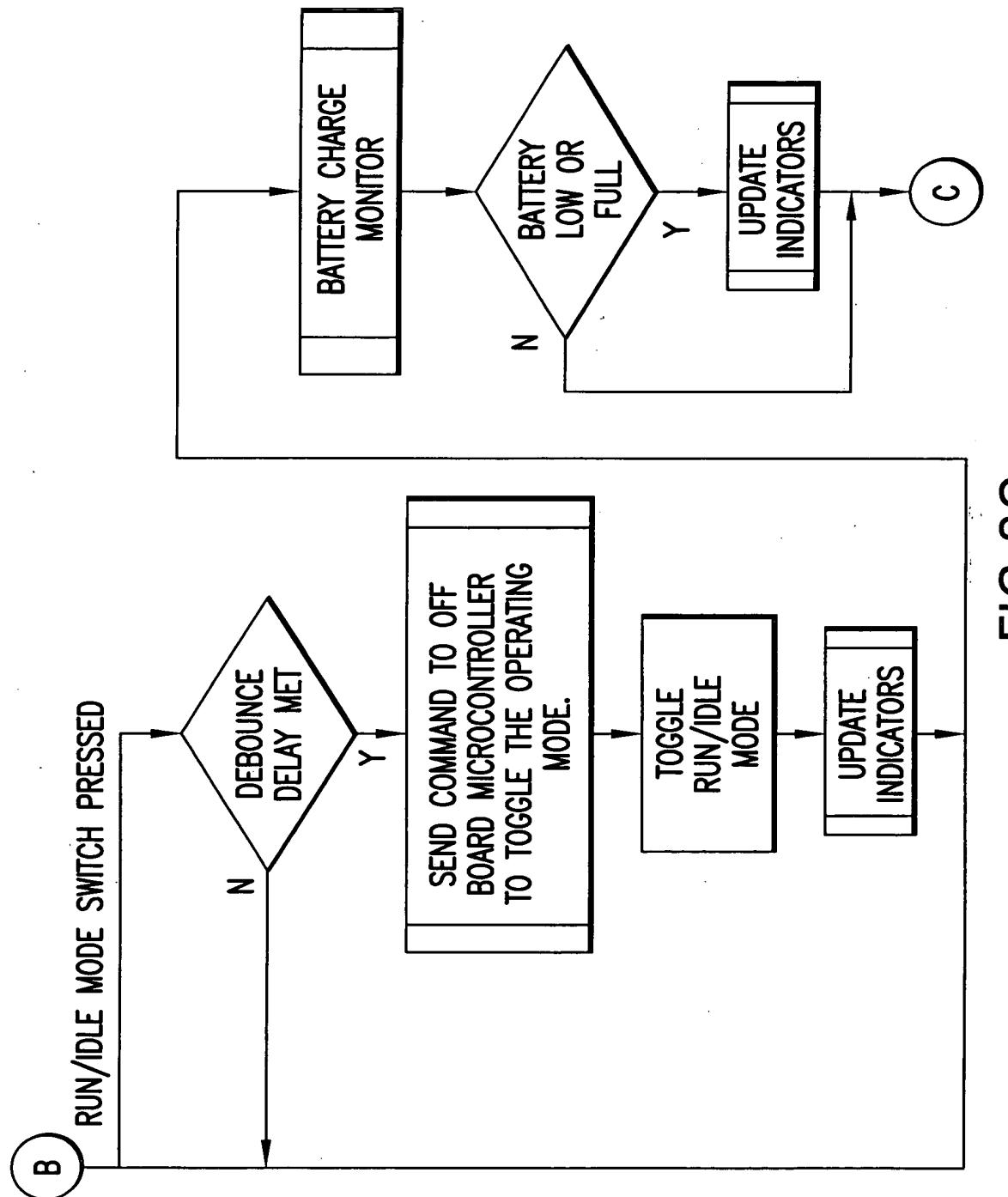


FIG. 3C

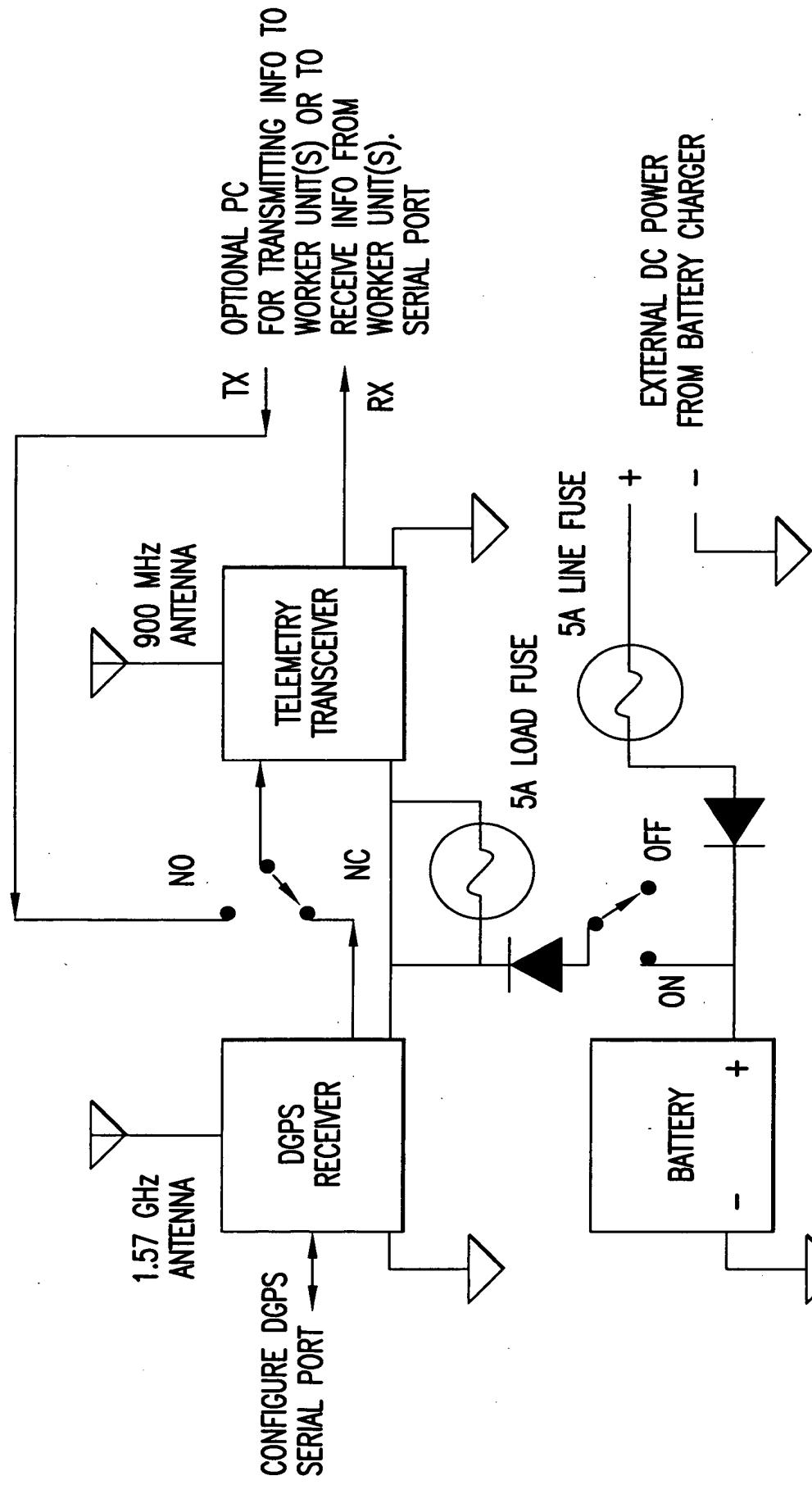


FIG. 4A

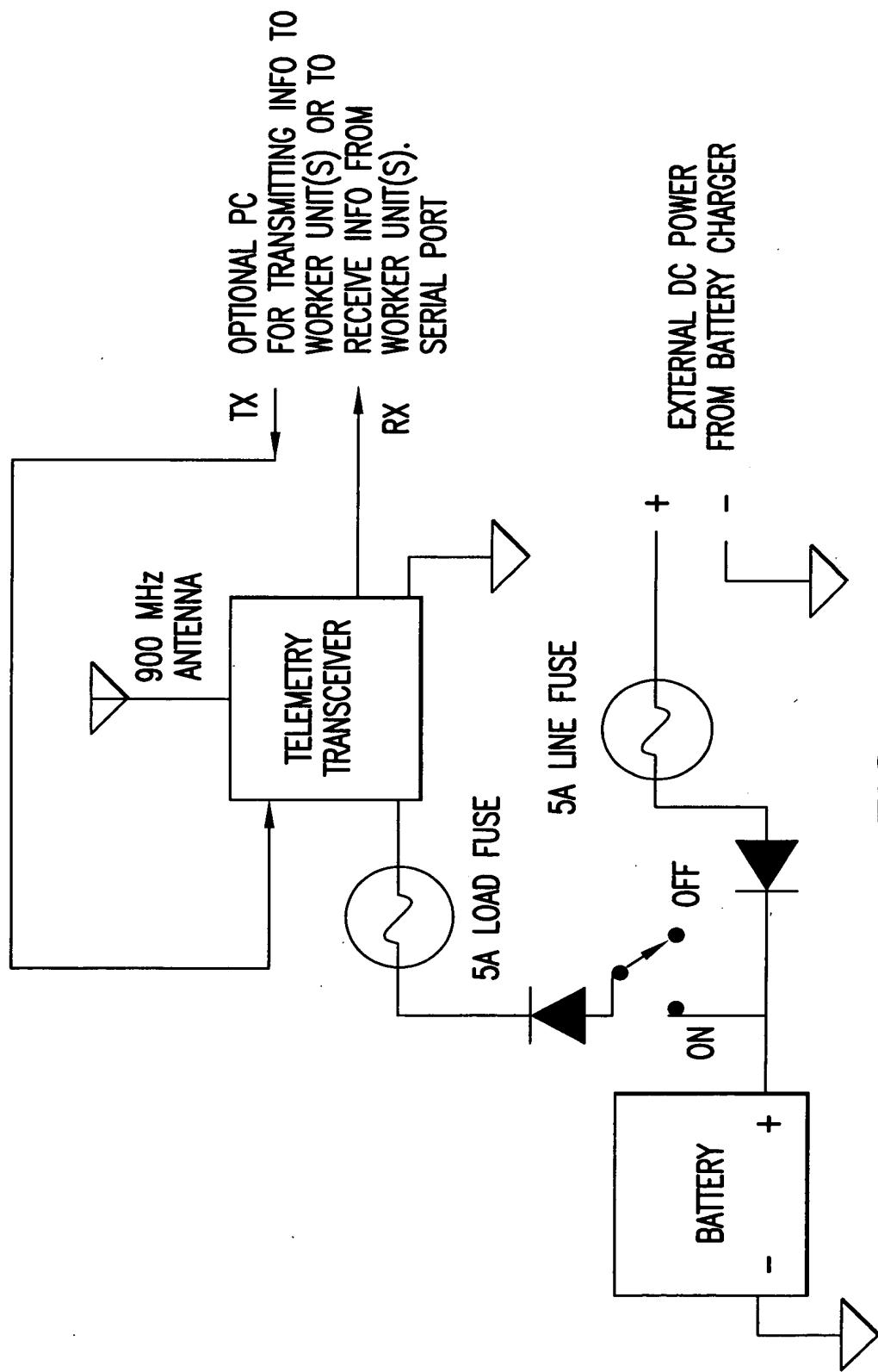


FIG.4B

FIG. 5A

LPS MK3 PROGRAM INTERFACE	
<u>FILE</u>	<u>COMMANDS</u>
<u>HELP</u>	
SENSEOR PORT ASSIGNMENT	
LPS SENSOR PORT A <u>NO SENSOR ATTACHED</u>	►
LPS SENSOR PORT B <u>NO SENSOR ATTACHED</u>	►
LPS SENSOR PORT C <u>NO SENSOR ATTACHED</u>	►
LPS SENSOR PORT D <u>NO SENSOR ATTACHED</u>	►
DATA LOGGING INTERVAL	
1 <input style="width: 15px; height: 15px; border: 1px solid black; border-radius: 5px;" type="button" value="▲"/> <input style="width: 15px; height: 15px; border: 1px solid black; border-radius: 5px;" type="button" value="▼"/>	<input type="radio"/> HOURS <input type="radio"/> MINUTES <input checked="" type="radio"/> SECONDS
LPS UNIT ID	<input type="text"/>
LPS TIME ZONE	<input type="text"/>
LPS DATA RECEIVED	
DATE/TIME	<input type="text"/>
LATITUDE	<input type="text"/>
LONGITUDE	<input type="text"/>
ALTITUDE	<input type="text"/>
POS. CONFIDENCE	<input type="text"/>
INVALID QUALITY INFORMATION	<input type="text"/>
LPS SENSOR PORT A	<input type="text"/>
LPS SENSOR PORT B	<input type="text"/>
LPS SENSOR PORT C	<input type="text"/>
LPS SENSOR PORT D	<input type="text"/>

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LPS MK3 PROGRAM INTERFACE		LPS DATA RECEIVED	
<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <u>FILE</u> <u>COMMANDS</u> <u>HELP</u>		<input type="text" value="DATE/TIME"/> <input type="text" value="LATITUDE"/> <input type="text" value="LONGITUDE"/> <input type="text" value="ALTITUDE"/> <input type="text" value="POS. CONFIDENCE"/> <input type="text" value="INVALID QUALITY INFORMATION"/> <input type="text" value="LPS SENSOR PORT A"/> <input type="text" value="LPS SENSOR PORT B"/> <input type="text" value="LPS SENSOR PORT C"/> <input type="text" value="LPS SENSOR PORT D"/>	<u>DATA LOGGING INTERVAL</u> <input type="text" value="1 ▲▼"/> <input type="radio"/> HOURS <input type="radio"/> MINUTES <input checked="" type="radio"/> SECONDS <input type="text" value="LPS UNIT ID"/> <input type="text" value="LPS TIME ZONE"/>
LPS SENSOR PORT A <input style="background-color: #ffffcc; border: 1px solid black; border-radius: 5px; padding: 2px 5px; width: 150px; height: 20px; vertical-align: middle;" type="text" value="UMd TEMPERATURE SENSOR"/>	LPS SENSOR PORT B <input style="background-color: #ffffcc; border: 1px solid black; border-radius: 5px; padding: 2px 5px; width: 150px; height: 20px; vertical-align: middle;" type="text" value="MIE PERSONAL DataRAM"/>	LPS SENSOR PORT C <input style="background-color: #ffffcc; border: 1px solid black; border-radius: 5px; padding: 2px 5px; width: 150px; height: 20px; vertical-align: middle;" type="text" value="NO SENSOR ATTACHED"/>	LPS SENSOR PORT D <input style="background-color: #ffffcc; border: 1px solid black; border-radius: 5px; padding: 2px 5px; width: 150px; height: 20px; vertical-align: middle;" type="text" value="MIE PERSONAL DataRAM"/>
FILE COMMANDS HELP	LPS UNIT ID <input style="background-color: #ffffcc; border: 1px solid black; border-radius: 5px; padding: 2px 5px; width: 150px; height: 20px; vertical-align: middle;" type="text" value="PhDS 4-GAS MONITOR"/>	LPS TIME ZONE <input style="background-color: #ffffcc; border: 1px solid black; border-radius: 5px; padding: 2px 5px; width: 150px; height: 20px; vertical-align: middle;" type="text" value="QUEST TECH. 2900 SLM"/>	LPS SENSOR PORT A <input style="background-color: #ffffcc; border: 1px solid black; border-radius: 5px; padding: 2px 5px; width: 150px; height: 20px; vertical-align: middle;" type="text" value="NO SENSOR ATTACHED"/>
PAGE 8 SEC. 1 8/15 AT 7.2" LN 15 COL. 1 REC TRK - EXT			

FIG. 5B

LPS MK3 PROGRAM INTERFACE

FILE COMMANDS HELP

LOAD CONFIGURATION FILE
SAVE CONFIGURATION FILE
RESET INTERFACE - NEW UNIT
EXIT

LPS SENSOR PORT A
[Up/Down] TEMPERATURE SENSOR ►

LPS SENSOR PORT B
[Up/Down] PERSONAL DataRAM ►

LPS SENSOR PORT C
[Up/Down] NO SENSOR ATTACHED ►

LPS SENSOR PORT D
[Up/Down] NO SENSOR ATTACHED ►

DATA LOGGING INTERVAL
1 ▲ ▼ HOURS
MINUTES
SECONDS

LPS DATA RECEIVED

DATE/TIME
LATITUDE
LONGITUDE
ALTITUDE
POS. CONFIDENCE
INVALID QUALITY INFORMATION

LPS SENSOR PORT A
LPS SENSOR PORT B
LPS SENSOR PORT C
LPS SENSOR PORT D

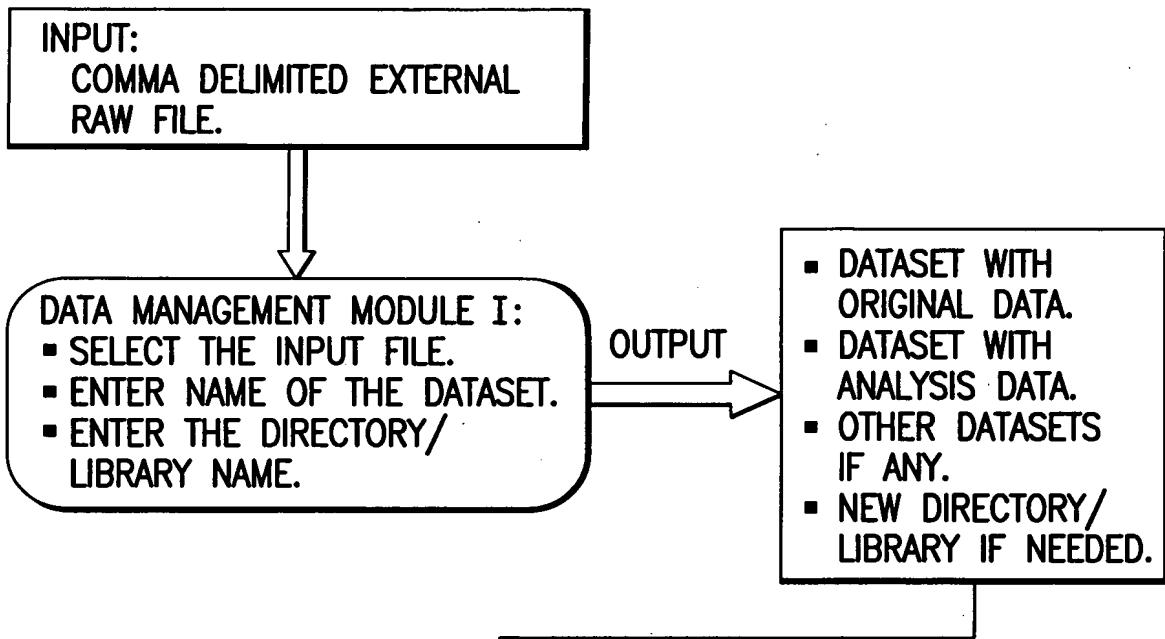
PAGE 9 SEC. 1 9/16 AT 3.4" LN 14 COL. 1 REC TRK - EXT

FIG. 5C

LPS MK3 PROGRAM INTERFACE	
FILE	COMMANDS
	REQUEST CONFIGURATION DATA
	SEND CONFIGURATION DATA
	REQUEST TIME ZONE
	SET TIME ZONE
	REQUEST UNIT ID
	SET UNIT ID
	REQUEST LPS DATA STREAM
	TERMINATE LPS DATA STREAM
	REQUEST UNIT: GO IDLE MODE
	REQUEST UNIT: GO RUN MODE
	LPS SENSOR PORT C NO SENSOR ATTACHED
	LPS SENSOR PORT D NO SENSOR ATTACHED
DATA LOGGING INTERVAL	1 <input type="button" value="<"/> < <input type="button" value=">"/> >
DATE/TIME	<input type="text"/>
LATITUDE	<input type="text"/>
LONGITUDE	<input type="text"/>
ALITUDE	<input type="text"/>
POS. CONFIDENCE	<input type="text"/>
INVALID QUALITY INFORMATION	<input type="text"/>
LPS SENSOR PORT A	<input type="text"/>
LPS SENSOR PORT B	<input type="text"/>
LPS SENSOR PORT C	<input type="text"/>
LPS SENSOR PORT D	<input type="text"/>
PAGE 9 SEC. 1 9/15 AT 3.1" LN 12 COL. 1 REC TRK - EXT	

FIG. 5D

PART I



PART II

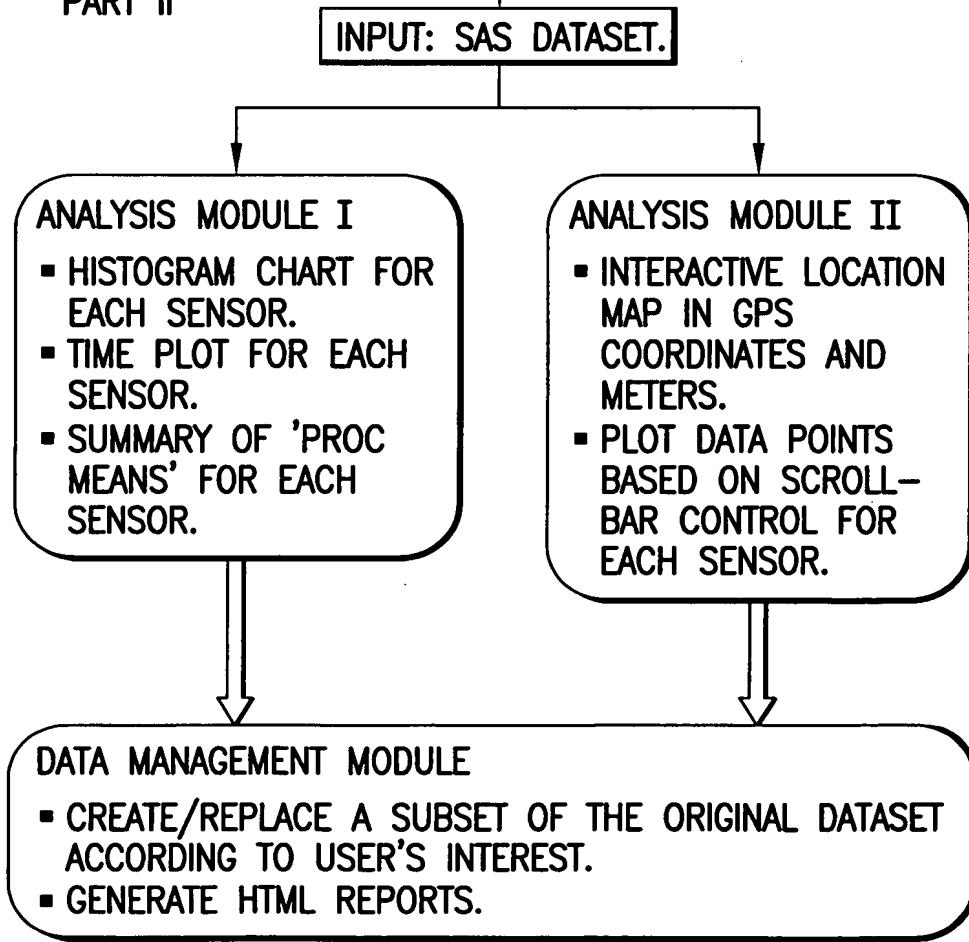


FIG.6

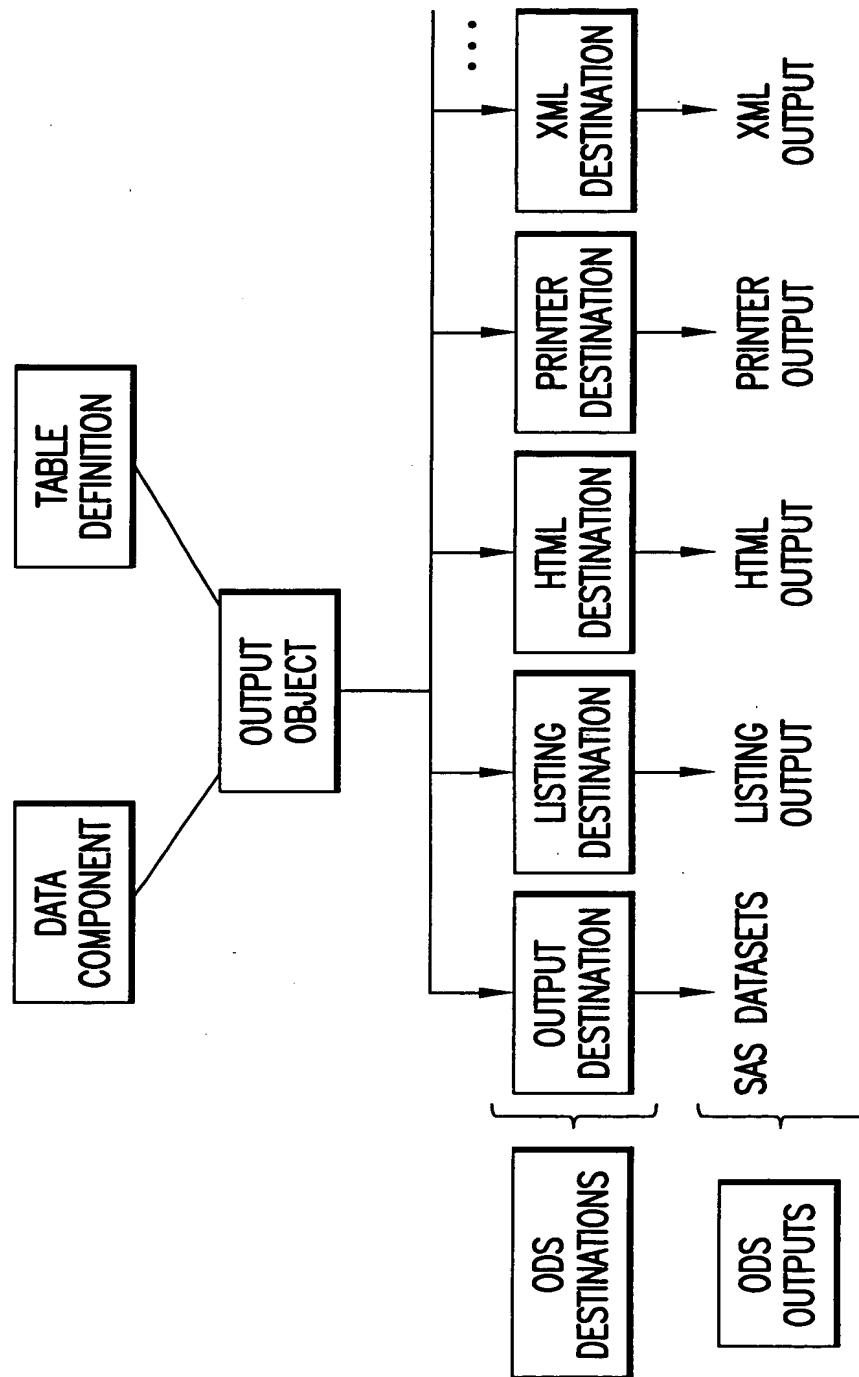


FIG. 7

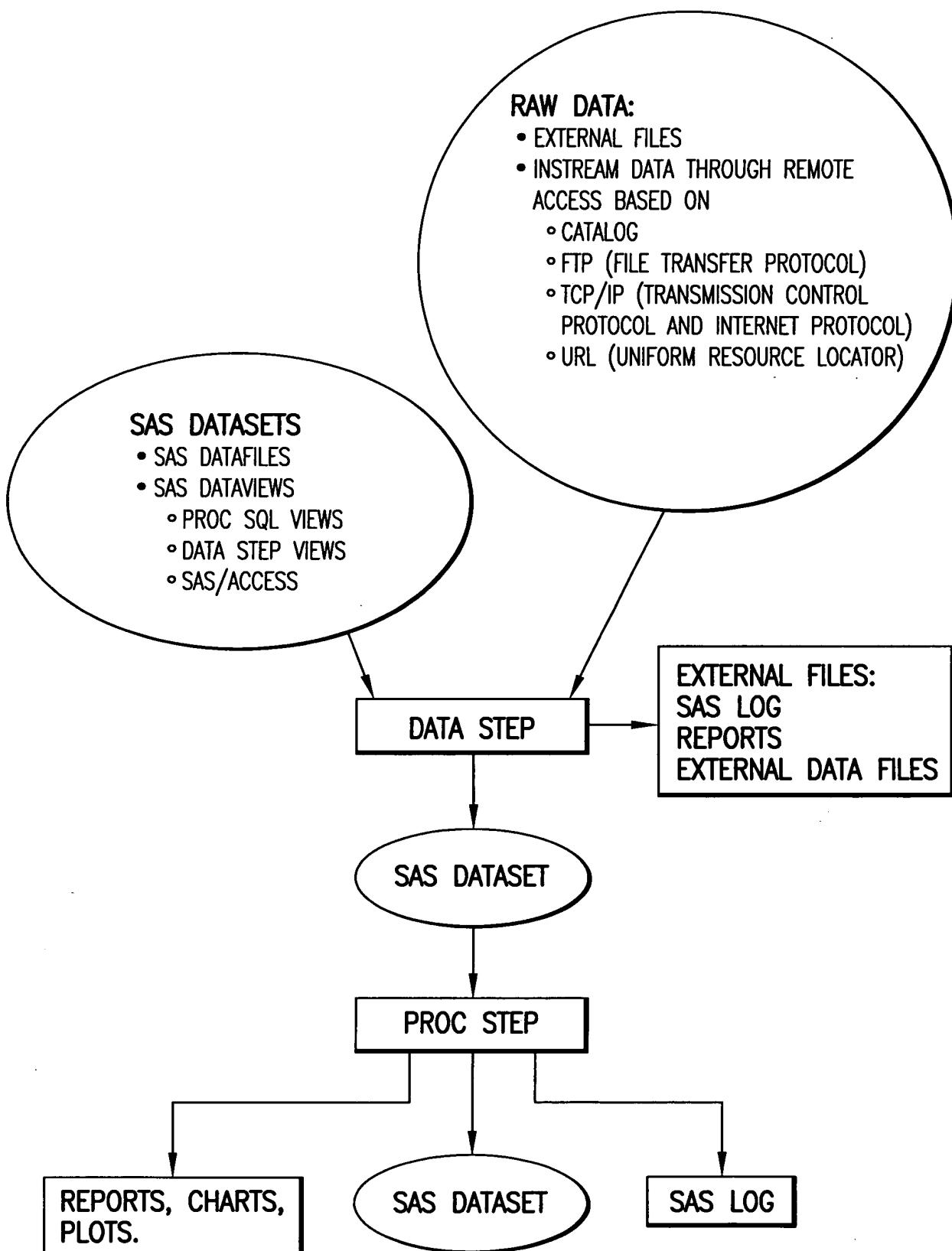


FIG.8

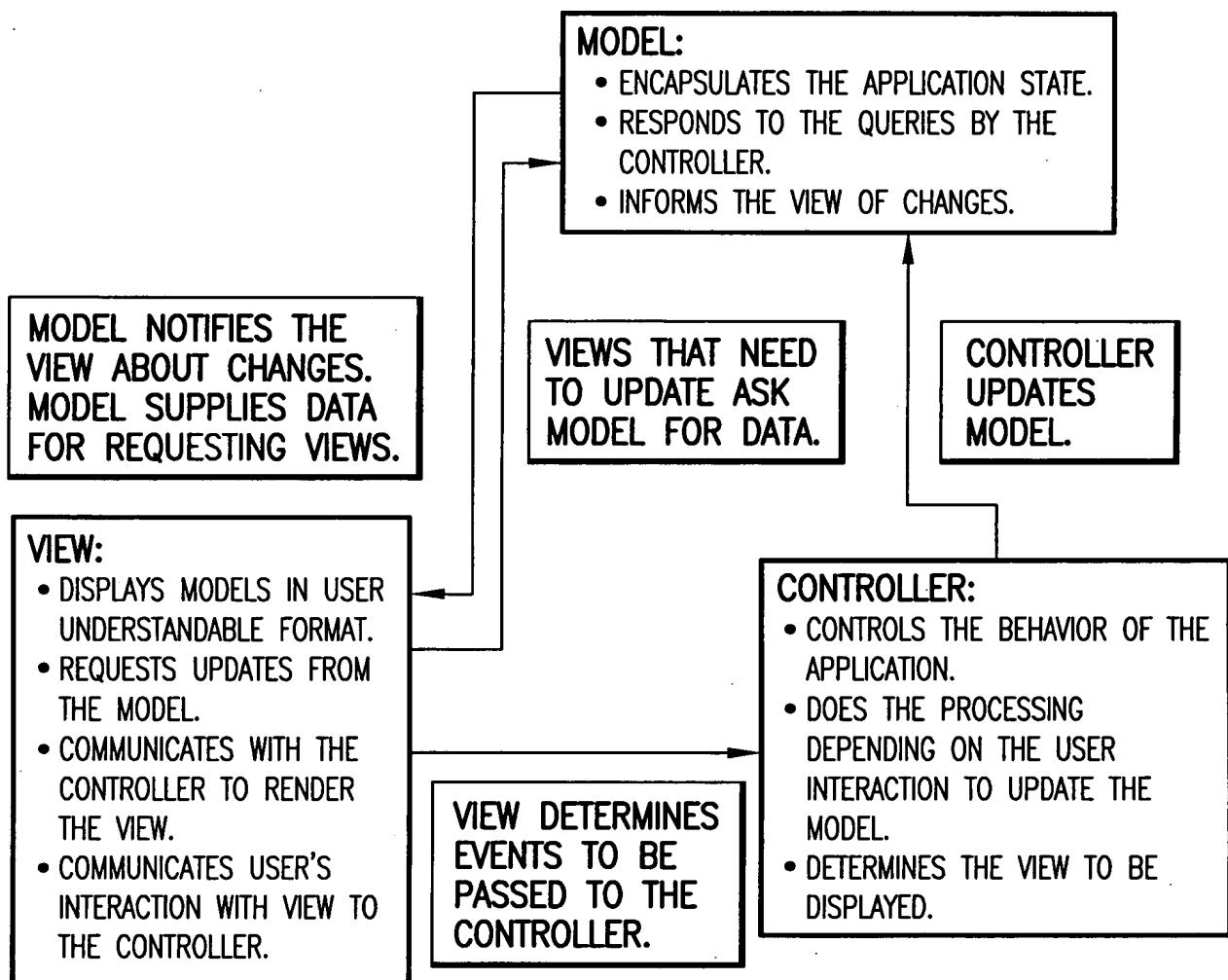


FIG.9

LPS USER ANALYSIS SOFTWARE

CREATE A NEW DATASET FROM TEXT FILE USE EXISTING SAS DATASET

<p>SENSORS ~ 1000</p> <p>TO LA LM SEC</p> <p>SELECT A FILE ~ 1010</p> <p>A:\DATA020731r001.TXT <input type="button" value="BROWSE"/></p> <p>ENTER DATASET NAME ~ 1020</p> <p>CHARLOTTE</p> <p>SELECT LIBRARY NAME ~ 1030</p> <p>MYSASLIB <input type="button" value="BROWSE"/></p> <p><input type="button" value="ANALYZE"/> ~ 1040</p> <p>SET REFERENCE POINT ~ 1050</p> <p>LONGITUDE <input type="text"/></p> <p>LATITUDE <input type="text"/></p> <p><input type="button" value="SET"/></p>	<p>SELECT LIBRARY NAME</p> <p><input type="text"/></p> <p>ENTER DATASET NAME</p> <p><input type="text"/></p> <p><input type="button" value="ANALYZE"/></p> <p>SET REFERENCE POINT</p> <p>LONGITUDE <input type="text"/></p> <p>LATITUDE <input type="text"/></p> <p><input type="button" value="SET"/></p>
--	--

FIG. 10

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Obs	STAT	DUST	LAVG	LMAX
1	N	2032.00	2032.00	2032.00
2	MIN	718.00	51.60	51.60
3	MAX	952.00	91.20	93.40
4	MEAN	763.48	64.55	66.07
5	STD	16.75	8.17	8.61
6	N (>0)	2032.00	.	.
7	GMN	763.31	.	.
8	GSD	1.02	.	.

FIG. 11A

Obs	POSITION CONFI	STAT	DATETIME	LAT METERS	LON METERS	ALT METERS	DUST	LAVG	LMAX
1		N	01JAN60:00:33:52.0	2032.00	2032.00	2032	2032	2032.0	2032.0
2		MIN	23MAY02:10:24:22.0	-635.54	-26.38	325	718	51.6	51.6
3		MAX	23MAY02:10:58:41.0	53.52	142.32	511	952	91.2	93.4
4		MEAN	23MAY02:10:41:29.9	-380.63	69.36	356	763	64.5	66.1
5		STD	01JAN60:00:09:55.7	208.23	52.73	29	17	8.2	8.6
6	2DD	N	01JAN60:00:04:16.0	256.00	256.00	256	256	256.0	256.0
7	2DD	MIN	23MAY02:10:24:32.0	-635.48	-2.58	330	747	51.6	51.6
8	2DD	MAX	23MAY02:10:58:05.0	52.29	142.32	389	812	81.2	83.2
9	2DD	MEAN	23MAY02:10:44:14.5	-469.84	79.39	362	762	65.3	66.7
10	2DD	STD	01JAN60:00:06:37.8	145.32	49.49	15	10	8.0	8.4
11	2DU	N	01JAN60:00:00:17.0	17.00	17.00	17	17	17.0	17.0
12	2DU	MIN	23MAY02:10:33:37.0	-551.90	-11.77	344	746	51.7	52.0
13	2DU	MAX	23MAY02:10:51:13.0	-401.20	115.67	411	871	71.5	73.3
14	2DU	MEAN	23MAY02:10:46:32.1	-476.12	44.39	360	770	57.3	58.2
15	2DU	STD	01JAN60:00:05:35.7	68.27	53.07	16	31	6.1	6.6
16	3DD	N	01JAN60:00:23:03.0	1383.00	1383.00	1383	1383	1383.0	1383.0
17	3DD	MIN	23MAY02:10:24:22.0	-635.54	-8.23	325	718	51.6	51.6
18	3DD	MAX	23MAY02:10:58:41.0	53.52	142.19	405	952	91.2	93.4
19	3DD	MEAN	23MAY02:10:39:19.2	-321.99	78.58	348	764	65.1	66.6
20	3DD	STD	01JAN60:00:10:45.6	216.45	51.17	16	18	8.2	8.6
21	3DU	N	01JAN60:00:06:03.0	363.00	363.00	363	363	363.0	363.0
22	3DU	MIN	23MAY02:10:29:47.0	-627.36	-26.38	332	734	51.6	51.6
23	3DU	MAX	23MAY02:10:51:26.0	-272.03	116.57	511	829	79.0	80.3
24	3DU	MEAN	23MAY02:10:47:55.2	-533.97	26.78	386	761	62.4	63.9
25	3DU	STD	01JAN60:00:03:12.8	79.69	37.98	49	12	7.9	8.5
26	CDR	N	01JAN60:00:00:13.0	13.00	13.00	13	13	13.0	13.0
27	CDR	MIN	23MAY02:10:33:17.0	-459.51	111.39	344	755	61.3	62.4
28	CDR	MAX	23MAY02:10:33:36.0	-449.85	112.66	344	786	68.4	70.1
29	CDR	MEAN	23MAY02:10:33:27.3	-455.80	112.18	344	769	64.5	66.1
30	CDR	STD	01JAN60:00:00:07.1	4.89	0.64	0	11	1.6	1.9

FIG. 11B

VARIABLE: DUST

QUANTILES (DEFINITION 5)	
QUANTILE	ESTIMATE
100% MAX	952
99%	826
95%	790
90%	780
75% Q3	768
50% MEDIAN	759
25% Q1	754
10%	751
5%	749
1%	741
0% MIN	718

VARIABLE: LA/G

QUANTILES (DEFINITION 5)	
QUANTILE	ESTIMATE
100% MAX	91.2
99%	82.0
95%	78.0
90%	75.7
75% Q3	70.9
50% MEDIAN	64.5
25% Q1	57.5
10%	53.6
5%	52.3
1%	51.6
0% MIN	51.6

VARIABLE: LMAX

QUANTILES (DEFINITION 5)	
QUANTILE	ESTIMATE
100% MAX	93.40
99%	83.90
95%	79.70
90%	77.60
75% Q3	73.00
50% MEDIAN	66.10
25% Q1	58.85
10%	54.30
5%	52.90
1%	51.60
0% MIN	51.60

FIG. 11C

FIG. 11D

FIG. 11E

FREQUENCY

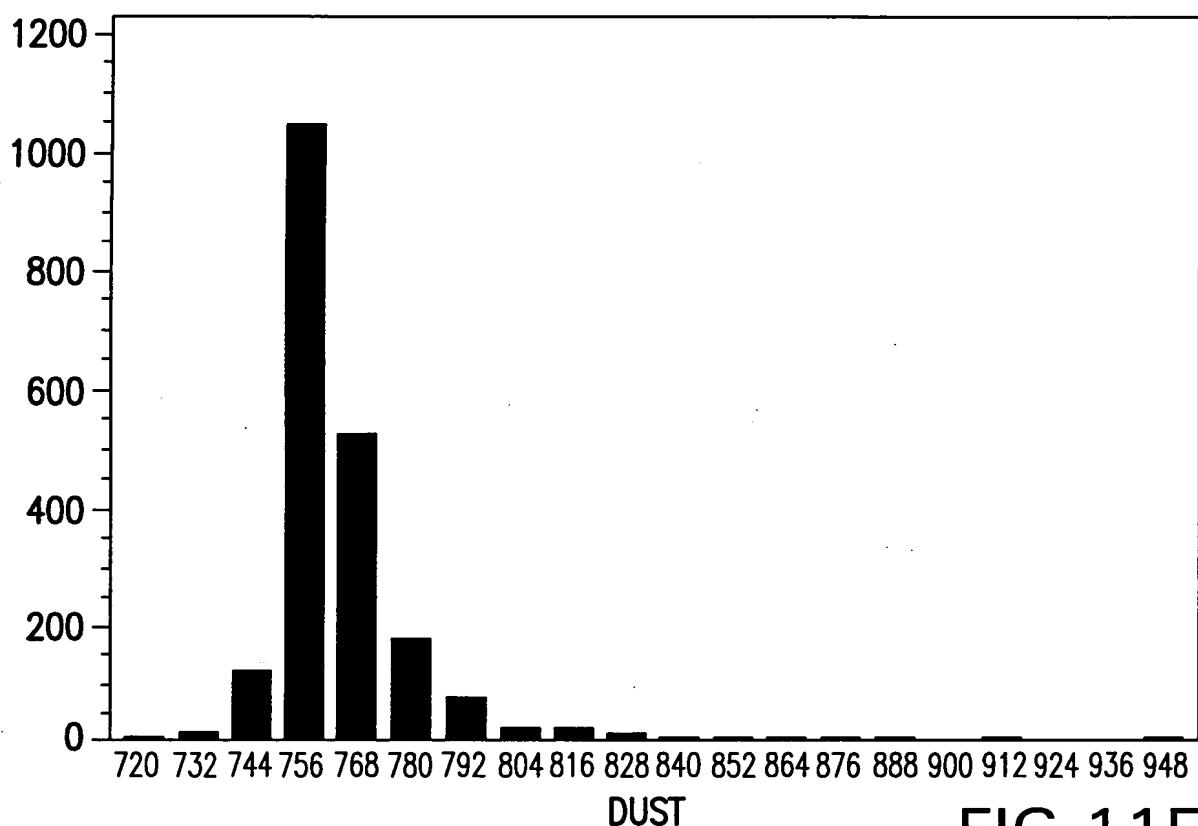


FIG. 11F

FREQUENCY

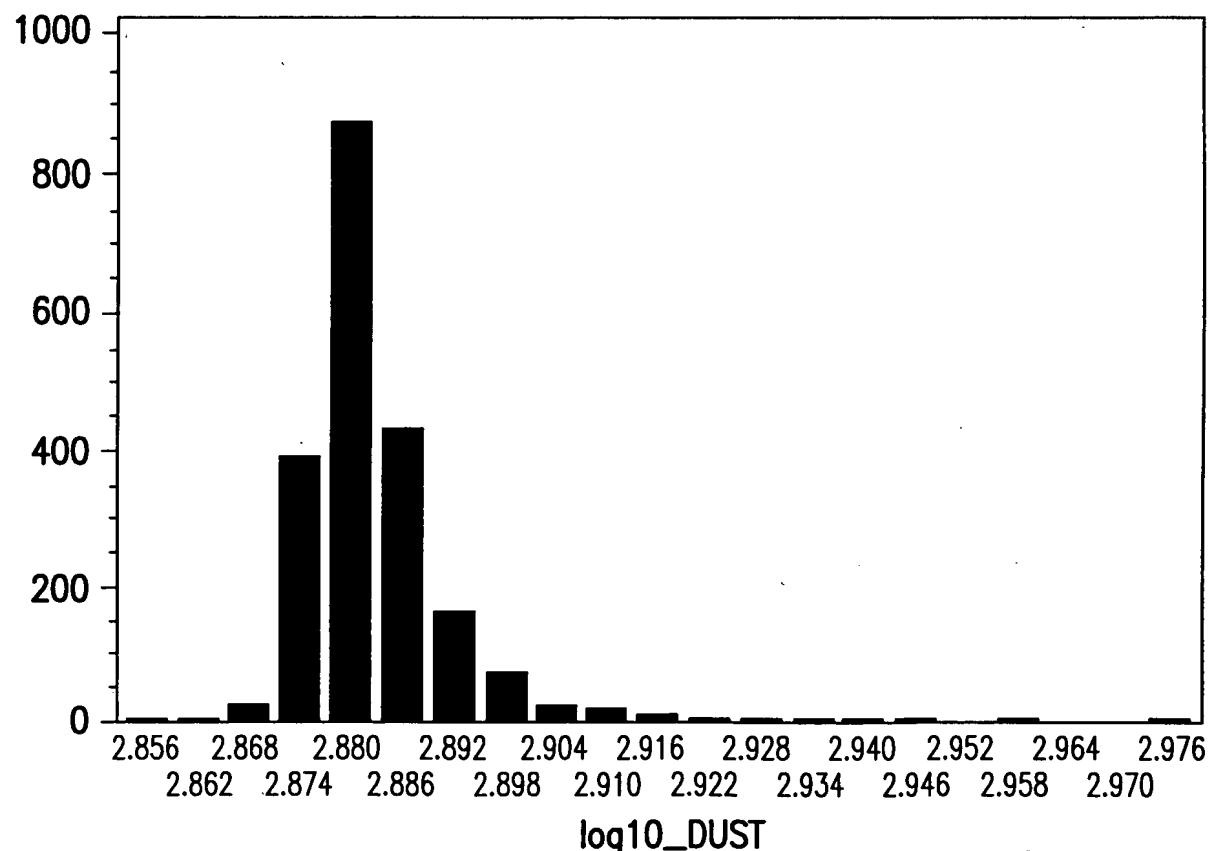
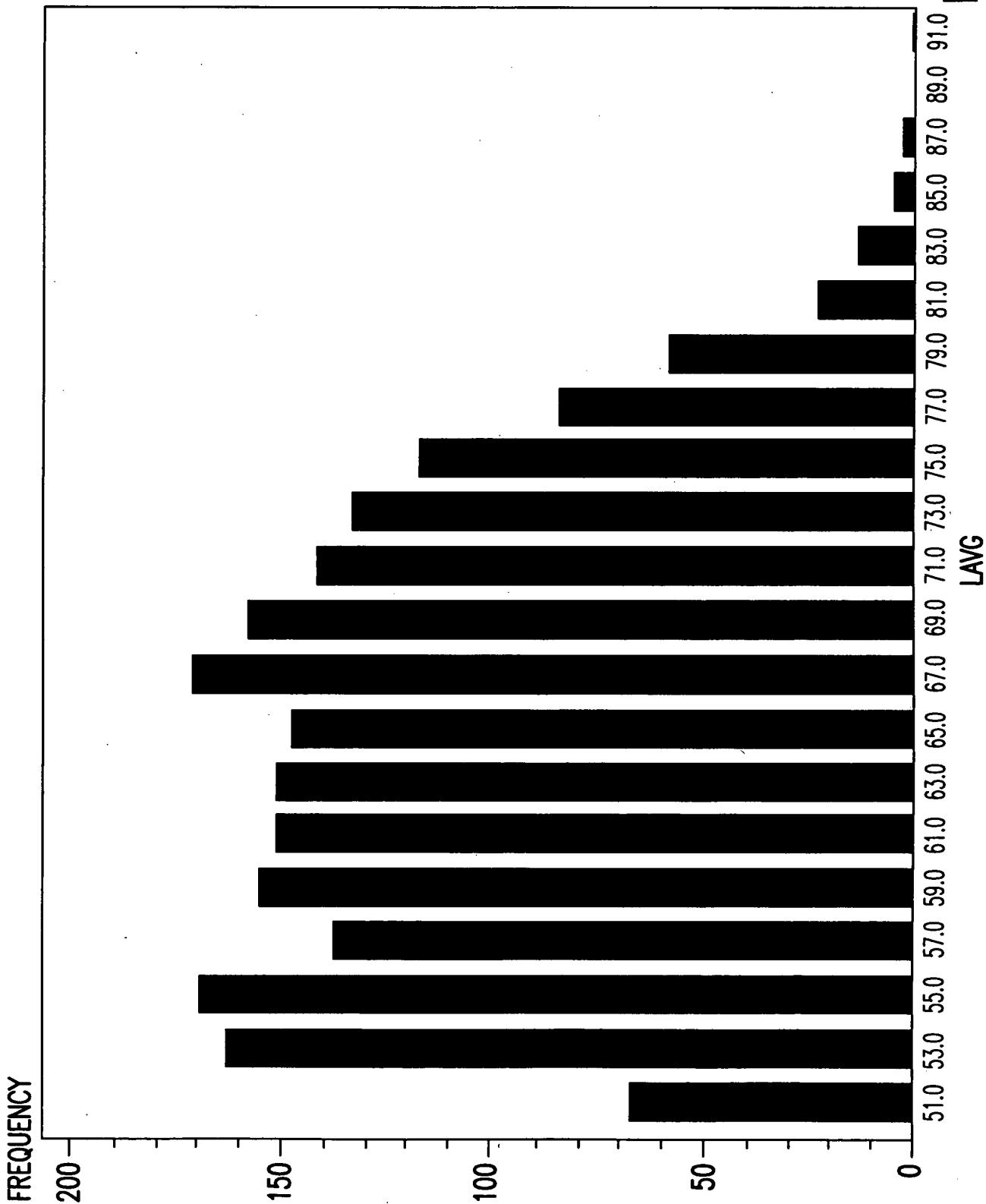
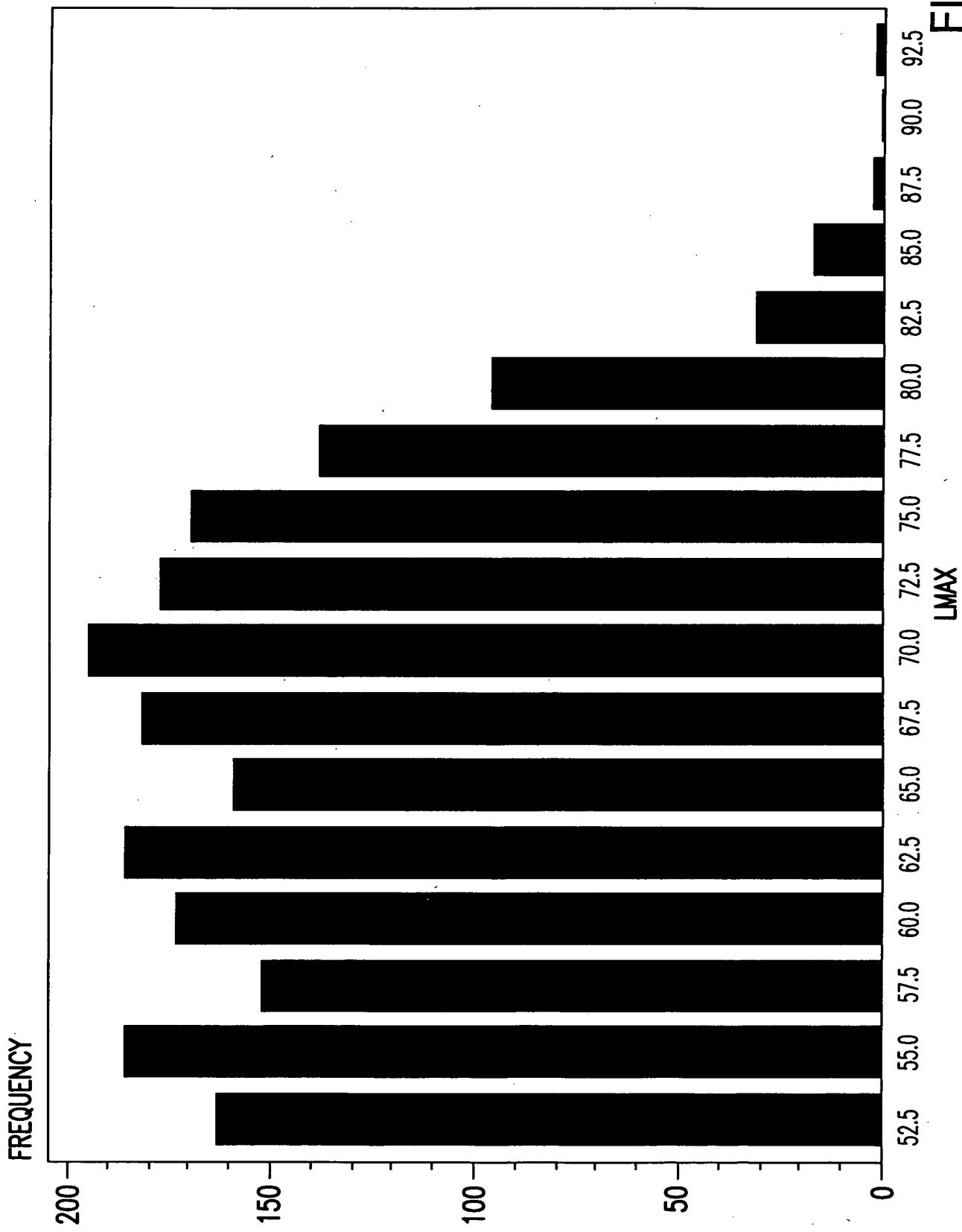


FIG. 11G





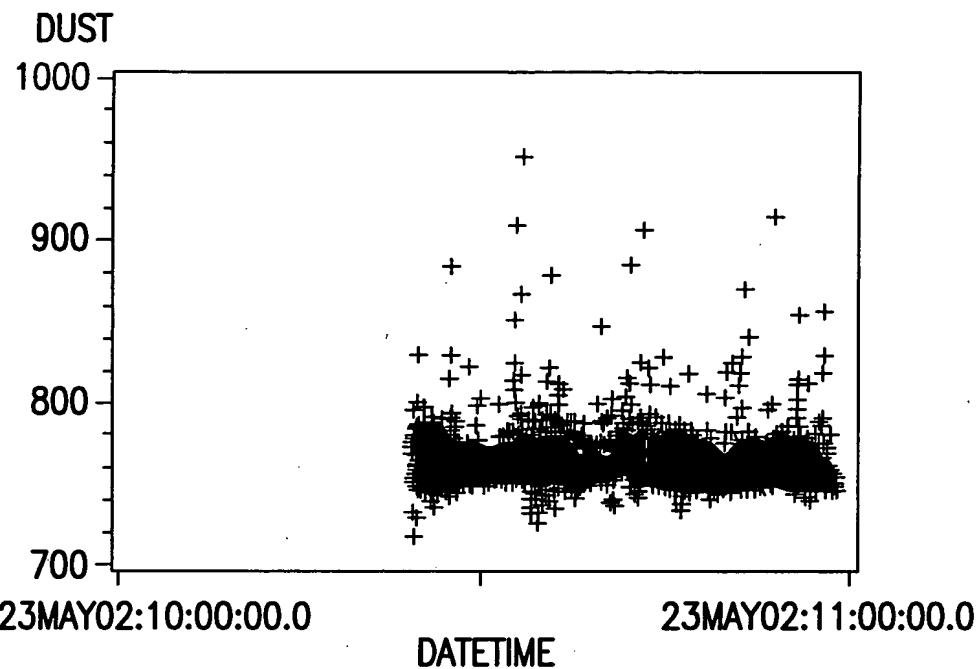


FIG. 11J

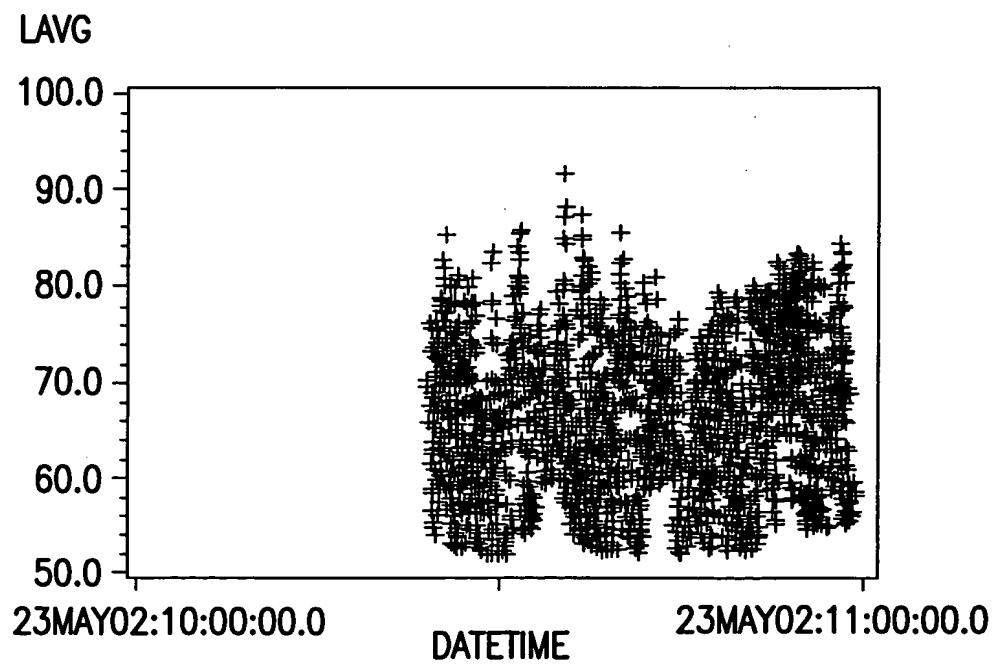


FIG. 11K

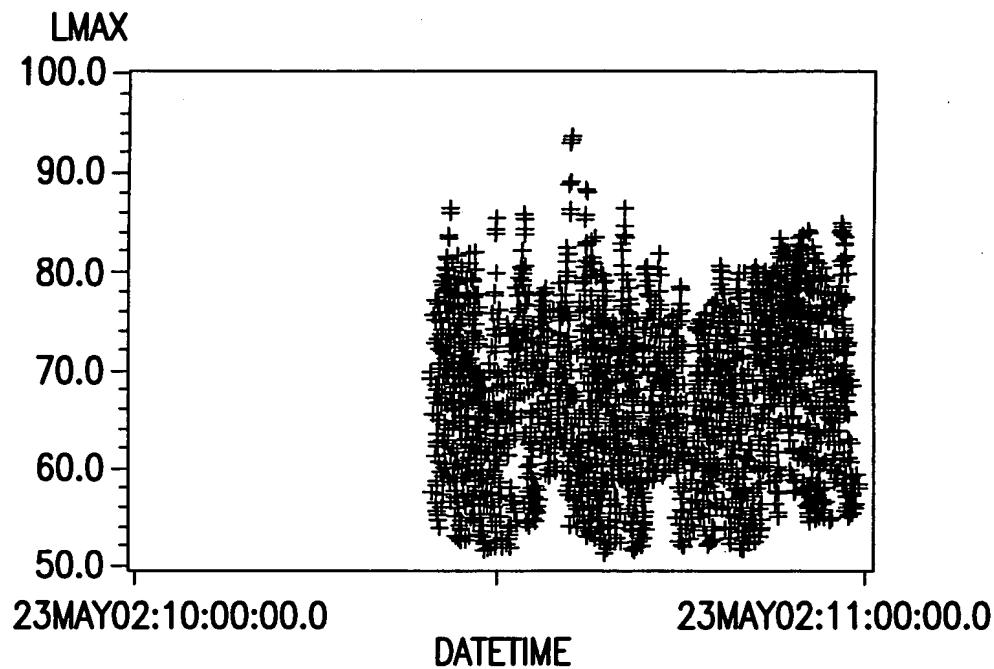


FIG. 11L

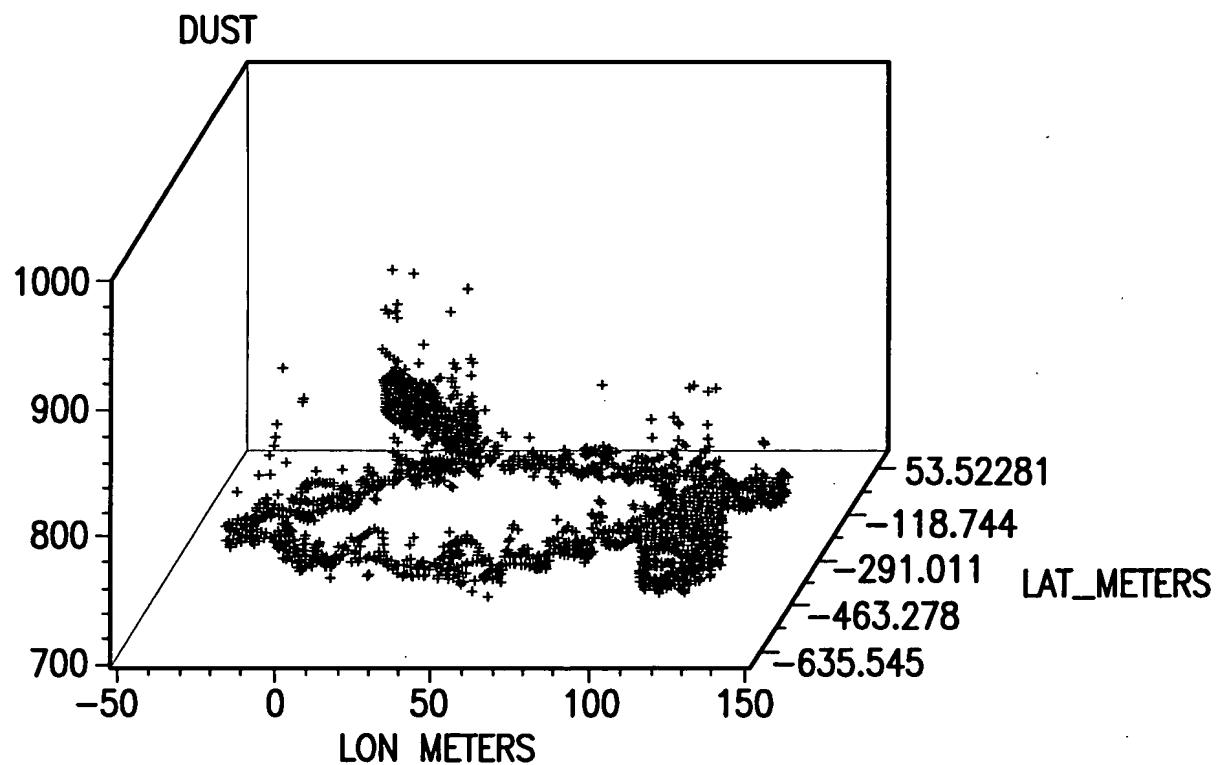


FIG. 11M

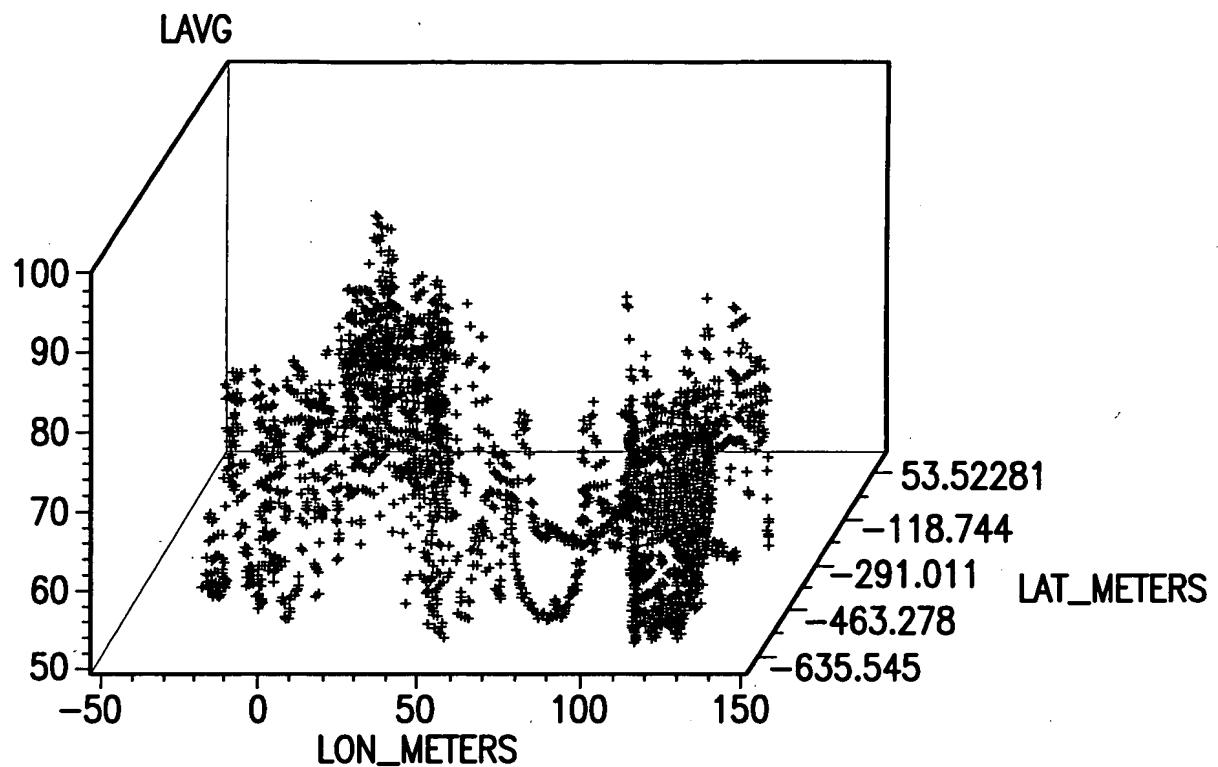


FIG. 11N

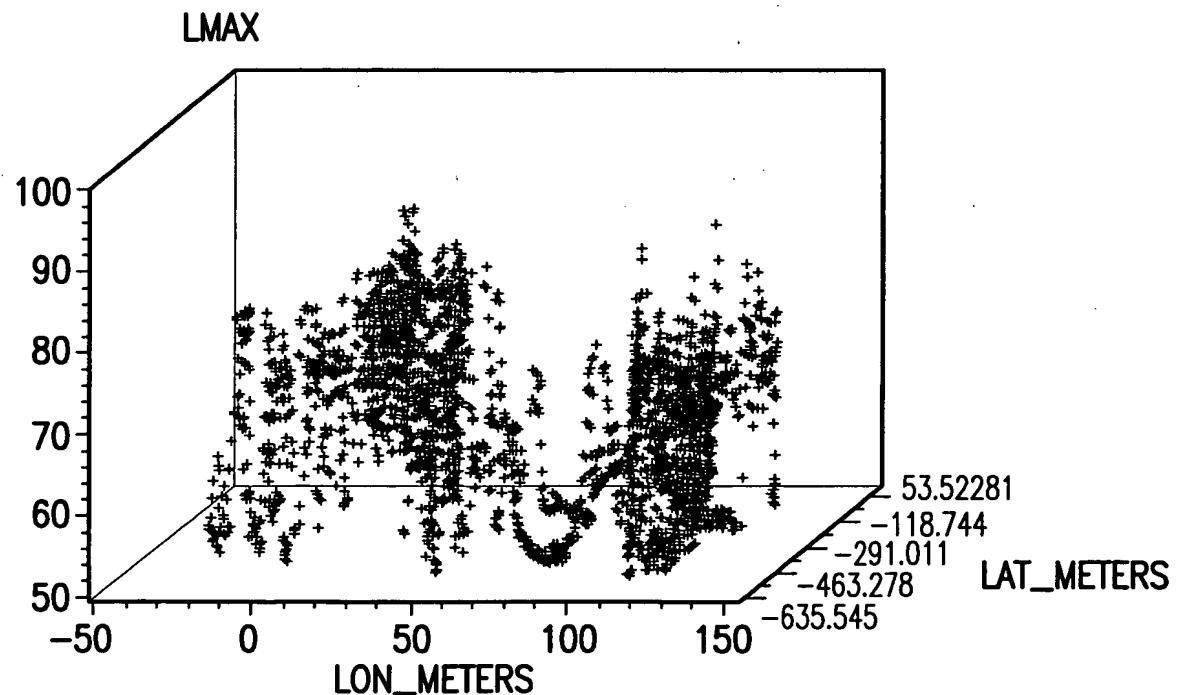


FIG. 11O

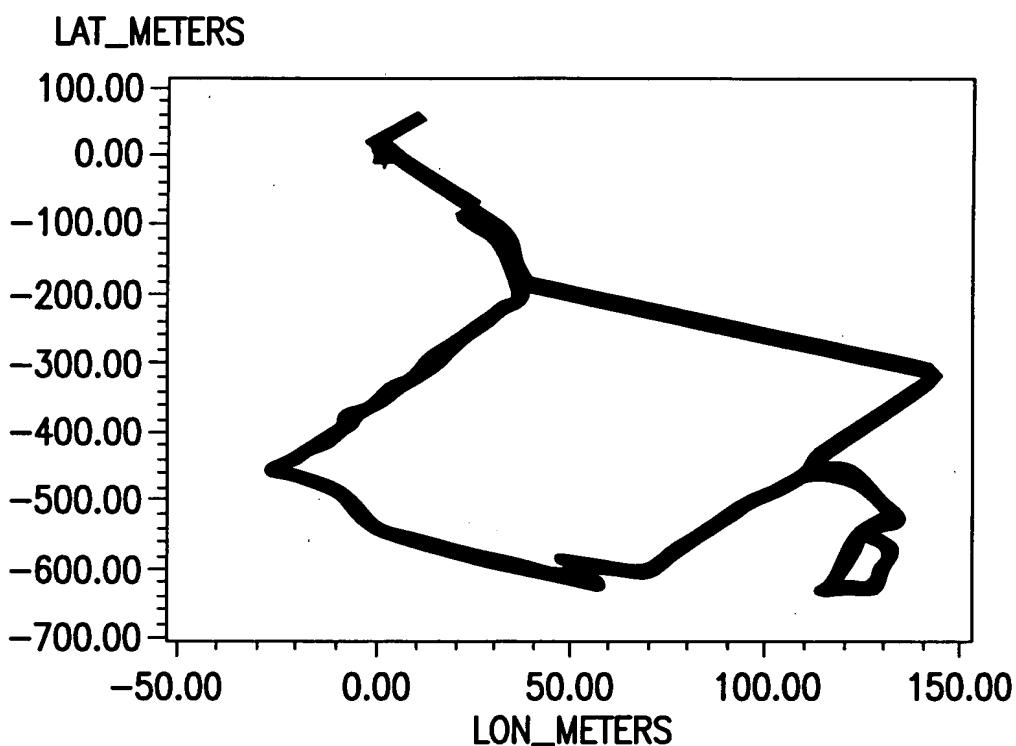


FIG. 11P

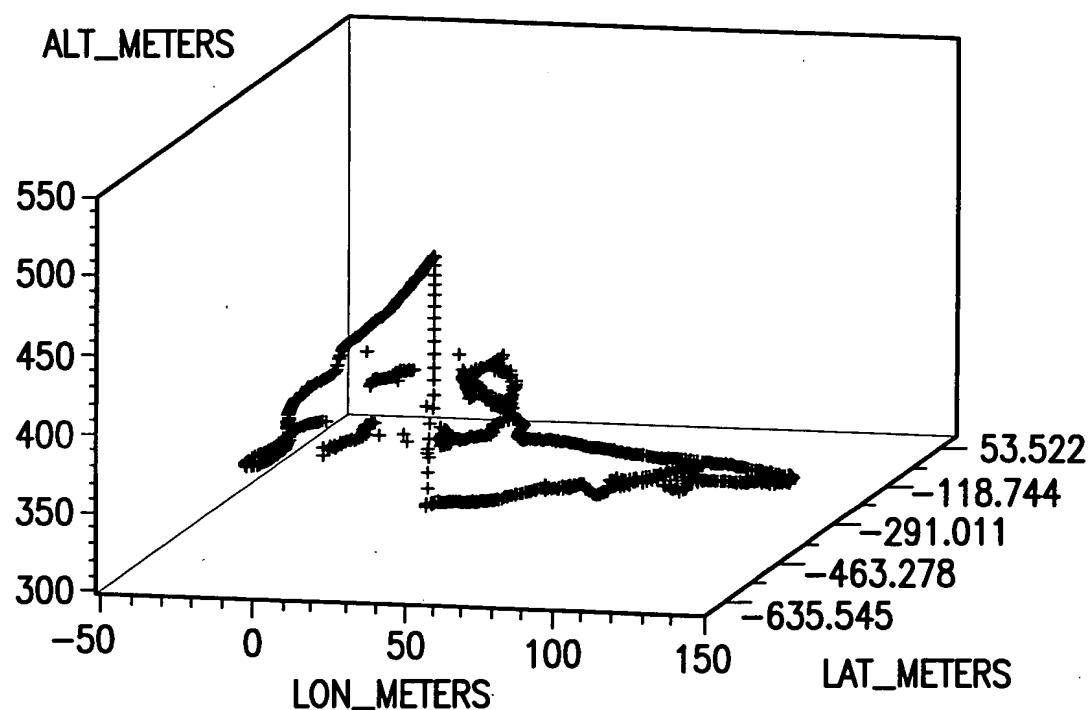


FIG. 11Q

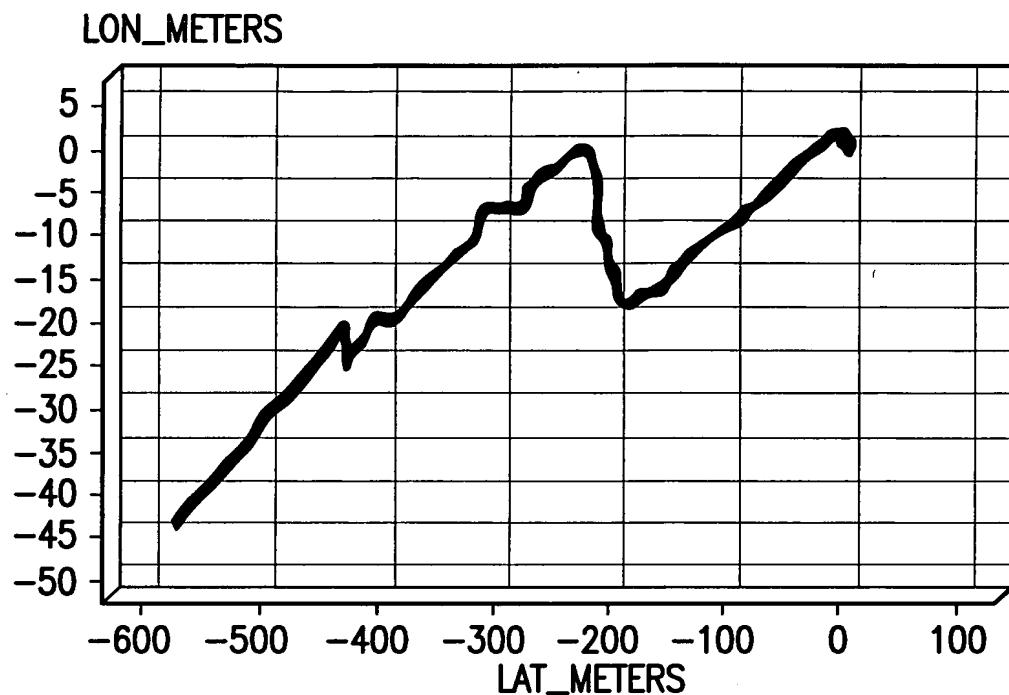


FIG. 11R

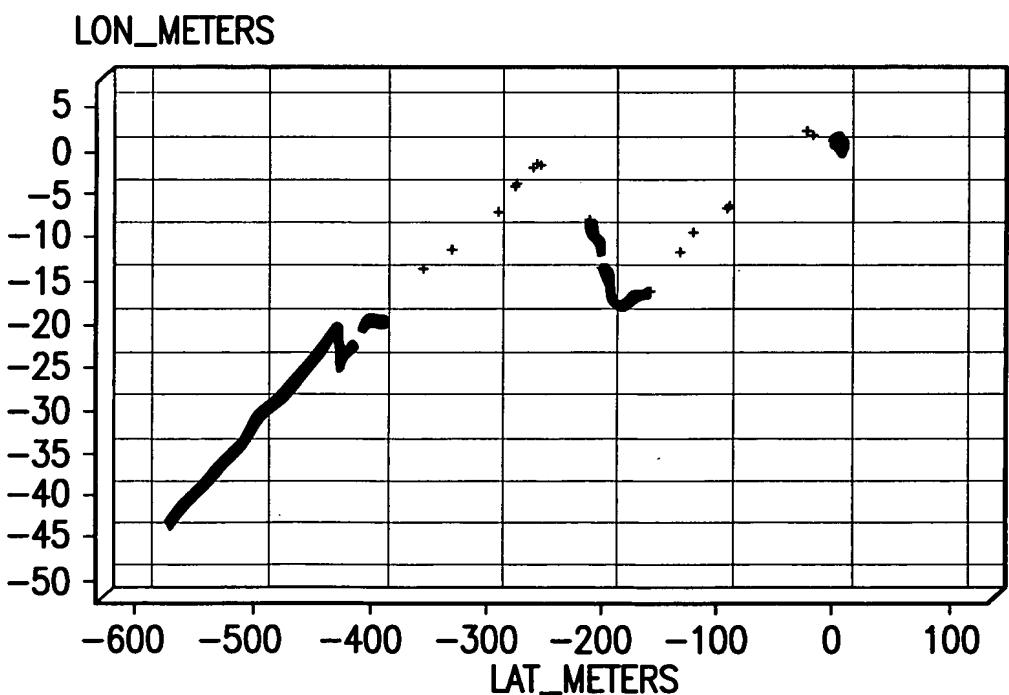


FIG. 11S

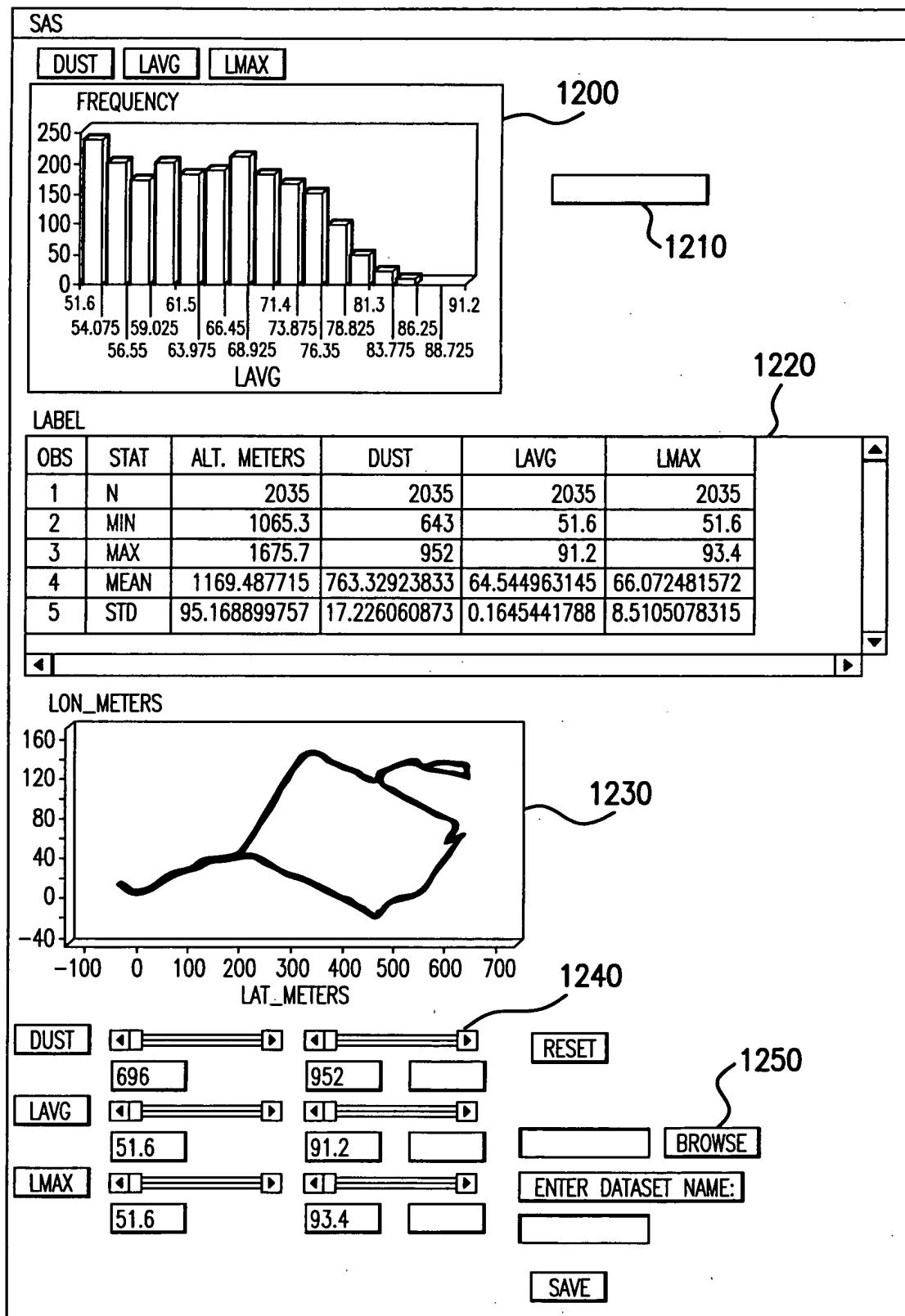


FIG. 12

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LPS ANALYSIS REPORT
THE MEANS PROCEDURE

VARIABLE	N	MEAN	STD. DEV.	MINIMUM	MAXIMUM
DUST	2032	763.4832677	16.7478686	718.0000000	952.0000000
LMAX	2032	66.073868	8.6120598	51.6000000	93.4000000
LAVG	2032	64.549154	8.1664903	51.6000000	91.2000000

LPS ANALYSIS REPORT
THE UNIVARIATE PROCEDURE
VARIABLE: DUST

QUANTILES (DEFINITION 5)	
QUANTILE	ESTIMATE
100%	952
99%	826
95%	790
90%	780
75% Q3	768
50% MEDIAN	759

FIG. 13

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LPS ANALYSIS REPORT

LAT_METERS

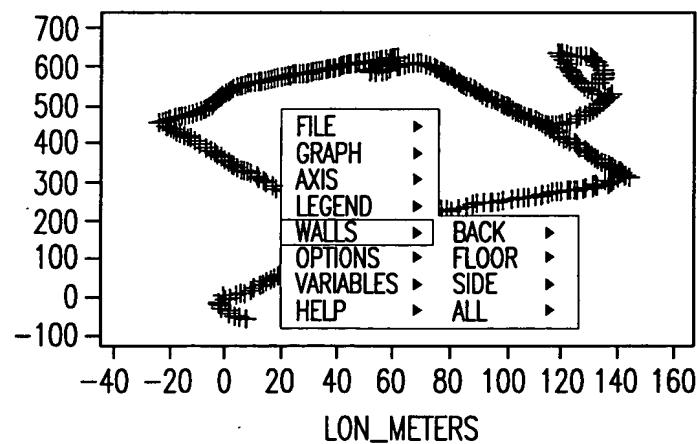


FIG. 14

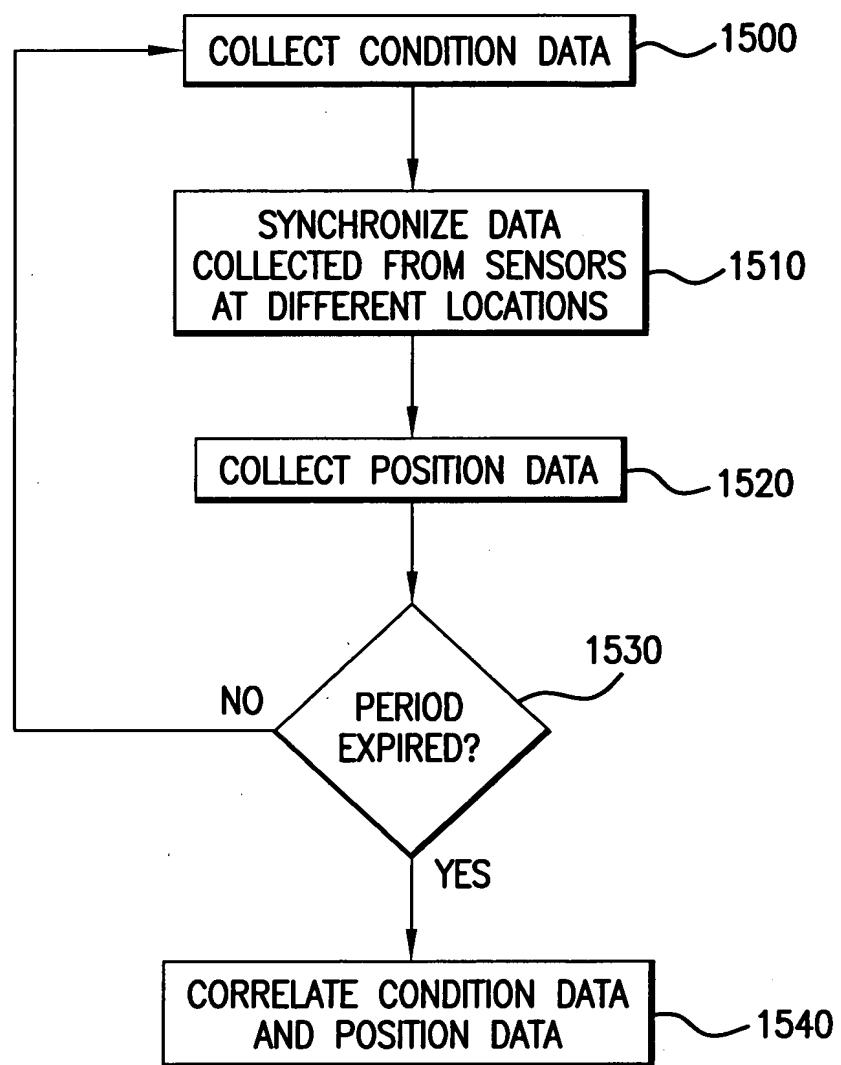


FIG. 15

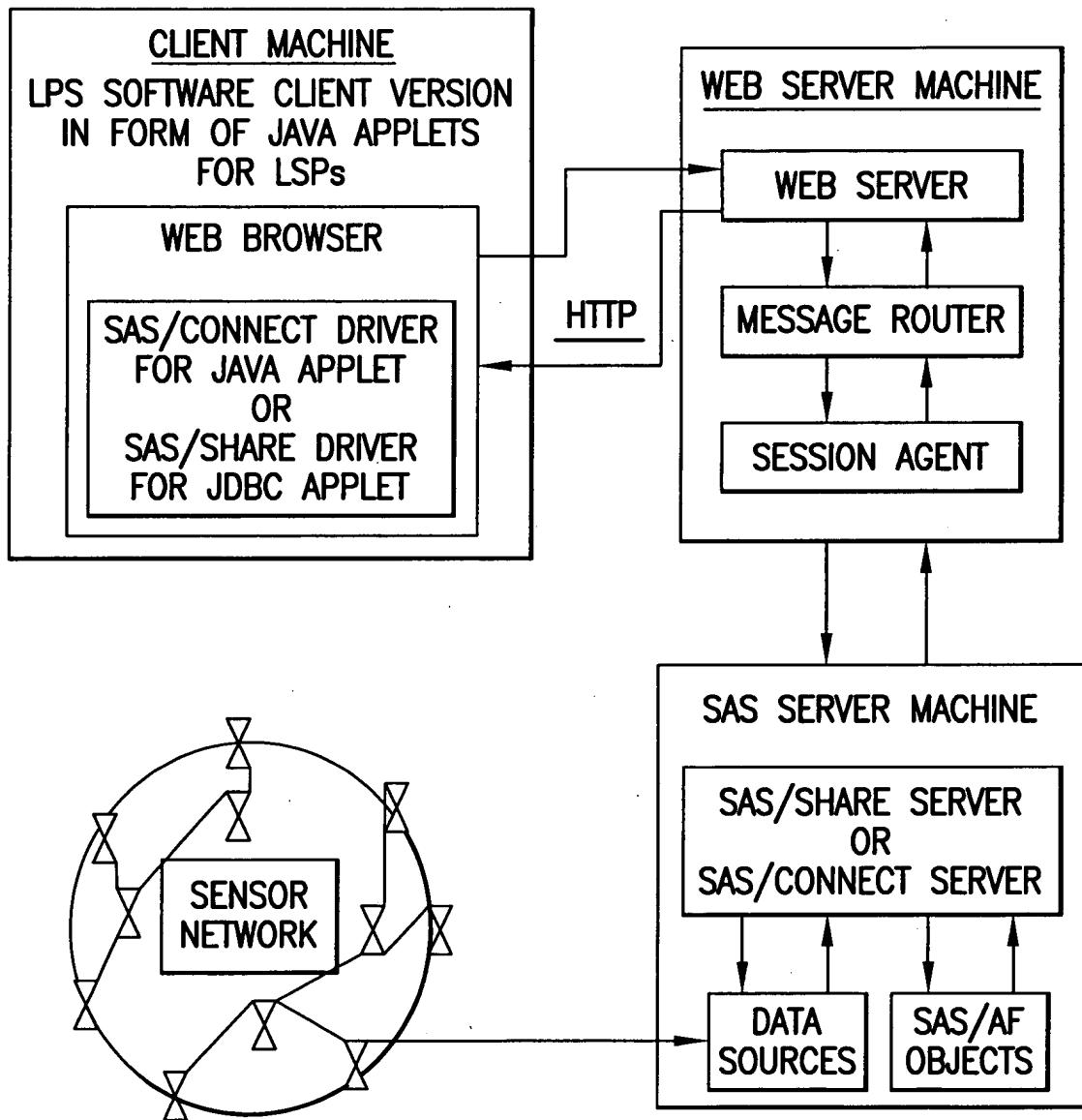


FIG.16

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